

TECHNICAL REPORT 41

New Mexico State Engineer
Santa Fe, New Mexico

*Water Use by Categories in New Mexico Counties
and River Basins, and Irrigated and Dry
Cropland Acreage in 1975*

by

Earl F. Sorensen

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WATER USE BY CATEGORIES IN NEW MEXICO COUNTIES AND RIVER BASINS, AND
IRRIGATED AND DRY CROPLAND ACREAGE IN 1975

by

Earl F. Sorensen

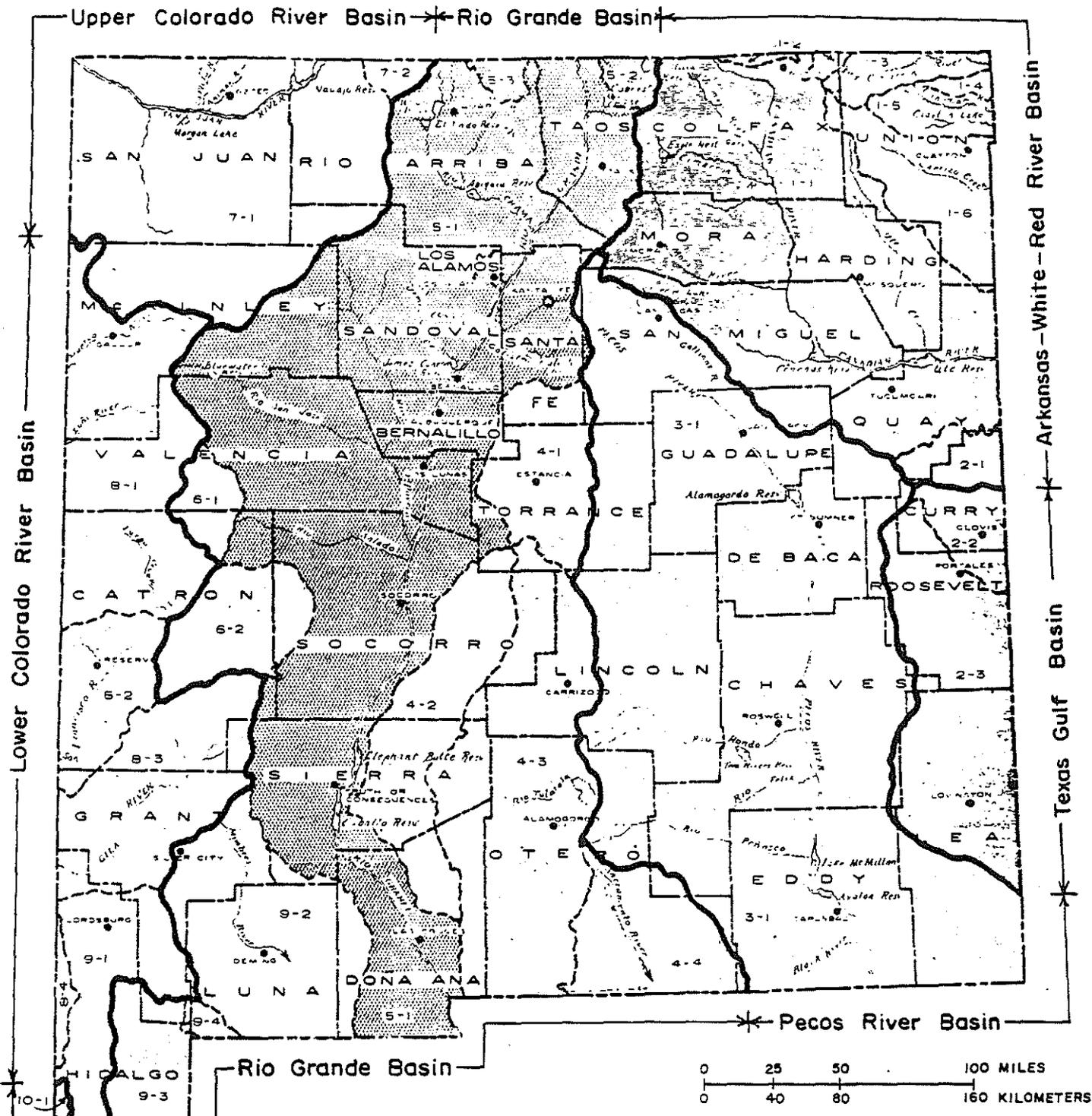
ABSTRACT

Withdrawals and depletions of water used in 1975 in New Mexico counties and river basins are tabulated in this report. Water use is shown for 13 categories and the amounts furnished from surface-water and ground-water sources are identified. Changes in river basin and surface-water drainage basin boundaries and areas have been made and these revisions are shown on figures 1 and 2. Data on irrigated agriculture in the State are included.

Most of the water withdrawn and depleted in New Mexico is for irrigation. In 1975 the total depletion from all sources was 2,286,900 acre-feet and of this amount 1,765,100 acre-feet was used for irrigation. In both 1970 and 1975 about 77 percent of the total depletion resulted from irrigation. Urban-rural uses increased between 1970 and 1975. In 1970 about 4 percent of the total depletion was used for this purpose. In 1975, urban-rural uses were 5 percent of the total depletion in New Mexico.

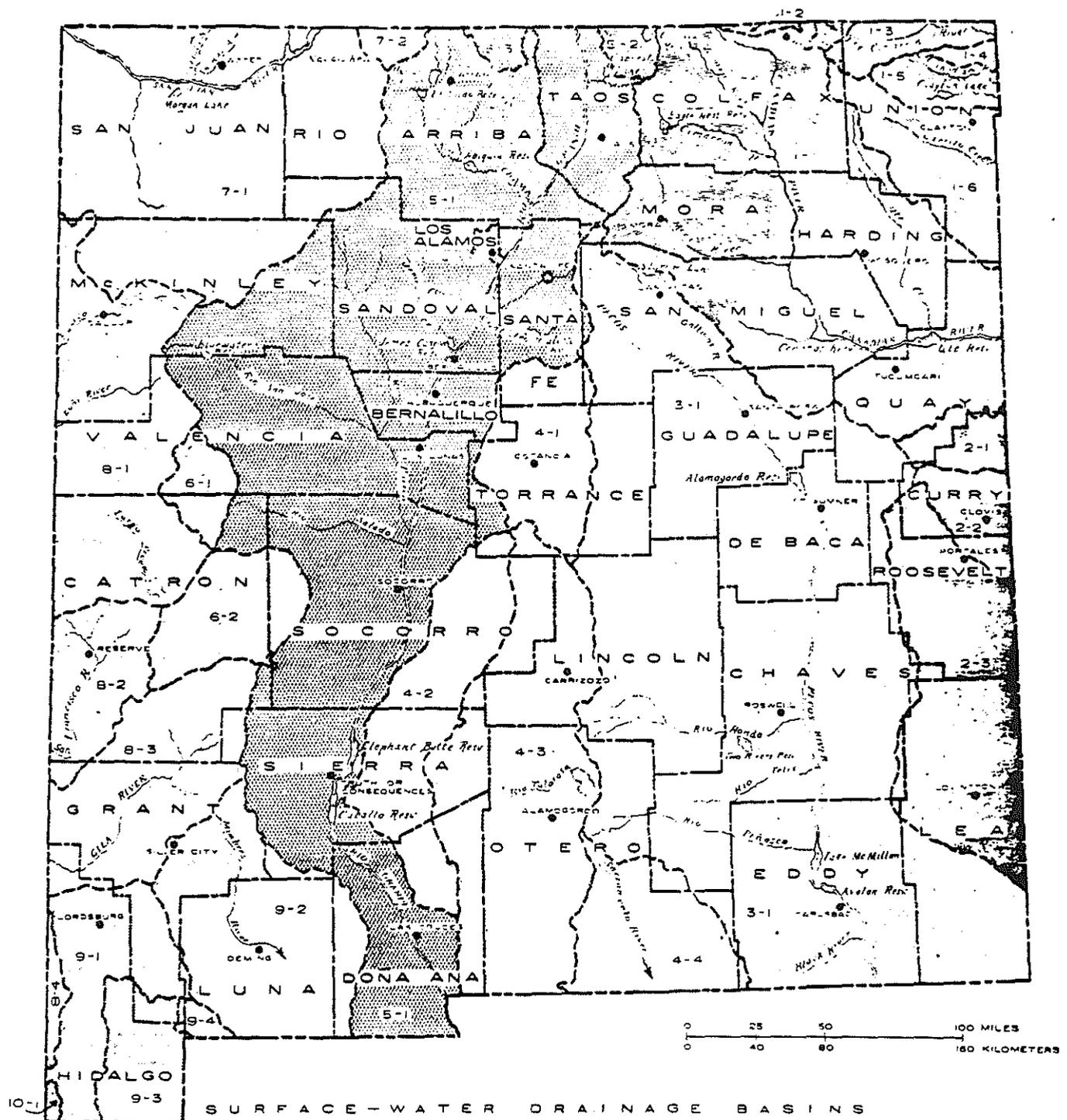
Between 1970 and 1975 the use of ground-water increased by about 12 percent. Ground-water depletion in 1970 was 1,086,000 acre-feet and in 1975 was 1,216,200 acre-feet. An increase in irrigated acreage using ground water accounted for most of the difference; however, significant increases in urban-rural uses of ground water also occurred.

The use of surface water in New Mexico is relatively constant and where the supply was near normal there was no significant difference between 1970 and 1975 uses. Surface-water supplies were below normal in the Arkansas-White-Red and Pecos River Basins and use of these supplies in 1975 was less than in 1970.



Basin	Area/Sq. Mi.
Arkansas-White-Red River	17,500
Texas Gulf	5,420
Pecos River	25,985
Rio Grande	49,681
Upper Colorado River	9,780
Lower Colorado River	13,260
Rio Yaqui	40
State Total	121,666

FIGURE 1 — RIVER BASINS IN NEW MEXICO, REVISED 1975



BASIN	AREAS IN SQ. MILES	BASIN	AREAS IN SQ. MILES	BASIN	AREAS IN SQ. MILES
ARKANSAS RIVER BASIN		CENTRAL CLOSED BASINS		SAN JUAN RIVER BASIN	
1-1. CANADIAN RIVER	12,920	4-1. ESTANCIA BASIN	2,225	7-1. SAN JUAN RIVER	9,515
1-2. PURGATOIRE RIVER	145	4-2. JORNADA DEL MUERTO	3,240	7-2. NAVAJO RIVER	265
1-3. DRY CIMARRON RIVER	755	4-3. TULAROSA BASIN	6,725	TOTAL	9,780
1-4. CARRIZOZO CREEK	205	4-4. SALT BASIN	2,380	LOWER COLORADO RIVER BASIN	
1-5. NORTH CANADIAN RIVER	735	TOTAL	14,570	8-1. LITTLE COLORADO RIVER	5,365
1-6. CARRIZO CREEK	2,035	RIO GRANDE BASIN		8-2. SAN FRANCISCO RIVER	1,840
TOTAL	16,795	5-1. RIO GRANDE	25,710	8-3. GILA RIVER	3,520
SOUTHERN HIGH PLAINS		5-2. COSTILLA CREEK	245	8-4. SAN SIMON CREEK	230
2-1. RED RIVER	705	5-3. RIO SAN ANTONIO	215	TOTAL	10,955
2-2. BRAZOS RIVER	870	TOTAL	26,180	SOUTHWESTERN CLOSED BASINS	
2-3. LEA PLATEAU	4,550	WESTERN CLOSED BASINS		9-1. ANIMAS BASIN	2,305
TOTAL	6,125	6-1. NORTH PLAINS	690	9-2. MIMBRES BASIN	4,540
PECOS RIVER BASIN		6-2. SAN AGUSTIN PLAINS	2,010	9-3. PLAYAS BASIN	1,430
3-1. PECOS RIVER	45,985	TOTAL	2,700	9-4. NAVEL BASIN	161
				TOTAL	8,536
				RIO YAQUI BASIN	
				0-1. RIO YAQUI	40
				TOTAL	40
				STATE TOTAL	2,666

FIGURE 2 — SURFACE-WATER DRAINAGE BASINS IN NEW MEXICO. REVISED 1975

INTRODUCTION

Quantitative estimates of water used in New Mexico have been made since about 1950. Since 1965 quantitative estimates have been made every fifth year. This report presents data for water use in 1975. Other data included are revisions in river basins and surface-water drainage basin boundaries and areas, details of irrigated and dry cropland acreage, water used by irrigated agriculture, and location of irrigated lands.

Water use in 1975 is tabulated by categories for both river basins and counties and is presented in tables 1-4. Comparison of uses between 1970 and 1975 are shown in table 5. Irrigated acreage, sources of water used for irrigation, irrigation depletions, total irrigated and dry cropland acreage in New Mexico counties and river basins are tabulated and the location of irrigated lands is shown (see tables 6-11 and figure 3).

Previous Investigations

The U.S. Bureau of Reclamation (1950) published withdrawals and depletions in river basins and for the State for the period 1945-49. Reynolds (1959) reported similar data for 1955 to the U.S. Senate Select Committee on National Water Resources. Withdrawals and depletions in 1965 were compiled by the New Mexico State Engineer Office and published by the New Mexico State Planning Office (1967). Data for 1970 were compiled by the New Mexico State Engineer Office and published by the U.S. Bureau of Reclamation and the New Mexico Interstate Stream Commission (1976).

Present Investigation

This report revises and updates to 1975 the withdrawals and depletions by the same categories used in the 1970 compilation. Sources of data are many, but most are furnished to the State Engineer Office by State and Federal agencies, cities, and private companies. Cooperation in furnishing these data is excellent and without such cooperation, accuracy and reliability would be seriously affected.

TERMINOLOGY

"Withdrawal" is the amount of water taken from its source for use by industry, agriculture, or for all other purposes. The term "depletion" refers to that part of the water withdrawn that is no longer available because it has been either evaporated, transpired, incorporated into products or crops, consumed by man or livestock, or otherwise removed from the water environment. "Self-supplied uses" refer to categories that are furnished water outside of municipal systems by means of individual or company-owned facilities. The term "urban" refers to incorporated towns, villages, cities, or in densely settled urban fringe areas, whether incorporated or unincorporated, and having a population of 2,500 inhabitants, or more. "Rural" includes towns, villages, etc., of less than 2,500 inhabitants, and farms and ranches. Municipal supplies for urban places and for many smaller communities are furnished by water utilities. Water obtained from utilities serving the general public is termed "public supply." As used in this report, "public supply" and "municipal supply" are synonymous.

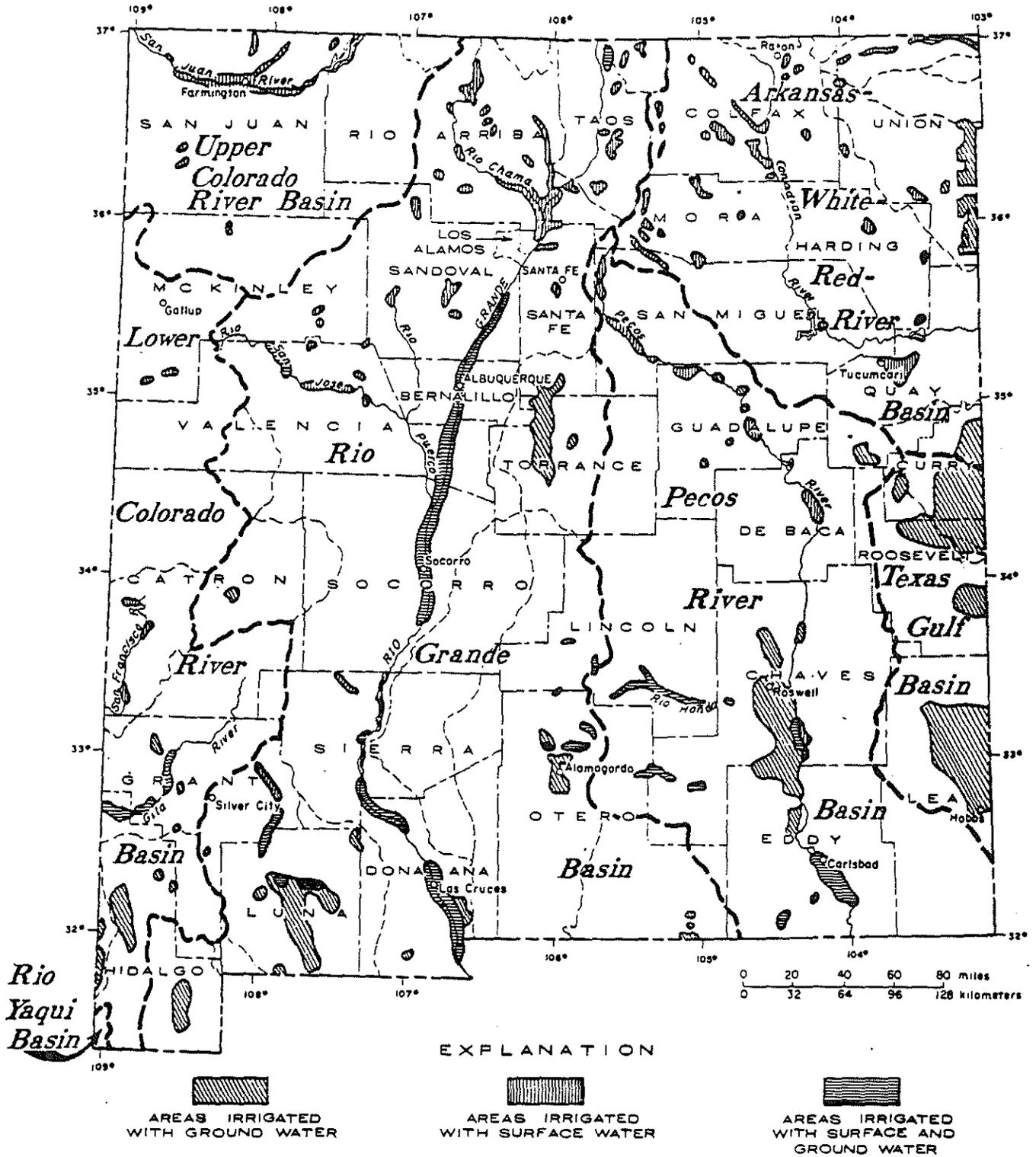


FIGURE 3 — LANDS IN NEW MEXICO IRRIGATED WITH GROUND WATER, SURFACE WATER, AND GROUND AND SURFACE WATER COMBINED, 1975.

"Total irrigated cropland" is the sum of irrigated planted crop acreage, diverted acreage, and idle and fallow acreage. The term means that such acreage is developed and that irrigation works exist to apply water to the land. "Total dry cropland" is the sum of planted crop acreage, diverted acreage, and idle and fallow acreage exclusive of that developed for irrigation. Neither term includes farmsteads, feedlots, areas in roads, and the like. "Acreage irrigated" refers to acreage to which irrigation water was applied during the crop year. "Irrigation depletion" refers to the amount of water consumptively used by crops; evaporation from open-water surfaces in canals, laterals, and farm ditches; evapotranspiration by phreatophytes and weeds along ditch banks; and evaporation from tail water at the bottom edges of fields and from sprinkler irrigation systems. It does not include seepage from canals, laterals, and farm ditches or deep percolation that occurs after irrigation water is applied to fields.

RIVER BASINS AND SURFACE-WATER DRAINAGE BASINS

Except for the Pecos River Basin, the river-basin boundaries shown on figure 1 conform to river-basin areas that have been adopted for use in regional and in National water and related land-resource planning. The Pecos River is a tributary of the Rio Grande and joins the Rio Grande near Comstock, Texas, and in National and regional planning it is included as a sub-basin of the Rio Grande. However, in New Mexico the Pecos River Basin is separate and distinct from the Rio Grande and for State-planning purposes the basins are considered separately.

All river basins except the Rio Yaqui and the Pecos River encompass more than one smaller surface-water drainage basin, some of which contribute surface flow to stream systems and some of which are topographically closed. These surface-water drainage basins are shown on figure 2. Surface water in many of the sub-basins of the Central, Western, and Southwestern Closed Basins drains into playa lakes and does not enter river drainage systems. Most surface-water flows on the Southern High Plains also terminate in playa lakes and except for intermittent flood flows, streamflow is minimal. Streamflow in the Arkansas, Pecos, Rio Grande, San Juan, and Lower Colorado River Basins is available for use within New Mexico and in adjacent states. The small area (40 square miles) of the Rio Yaqui Basin in New Mexico is located in an arid environment and surface flows seldom occur.

The boundaries and areas of the surface-water drainage basins shown on figure 2 have been revised since 1970. Revisions are based upon a series of revised maps covering the State of New Mexico published by the Army Map Service and the U.S. Geological Survey. A similar figure was initially prepared in 1964 based on topographic maps then available. Revisions were made because better topographic data have become available.

Data in this report were assembled for New Mexico counties, river basins, and surface-water drainage basins as shown on figures 1 and 2.

WATER USE BY CATEGORIES

New Mexico water withdrawals and depletions in 1975 were compiled for 13 separate categories. These categories are listed in tables 1, 2, 3, and 4. The data in tables 1 and 2 pertain to river-basin use; uses in counties are shown in tables 3 and 4. Municipal systems furnished water for urban and much of the rural uses. Irrigation, manufacturing, minerals, military, livestock, power, fish and wildlife, recreation, and single homesteads in rural areas were self-supplied. Throughout the State both surface water and ground water were used; withdrawals from each source in 1975 in river basins are shown in table 1 and depletions are shown in table 2. Similar data for counties are shown in tables 3 and 4.

Throughout the State where ground water was used full supplies were generally available. Surface water in the Rio Grande and Upper and Lower Colorado River Basins was about normal in 1975. Some late seasonal shortages in surface water used for irrigation occurred. In the Arkansas-White-Red River (AWR) Basin, runoff was below normal, carry-over storage in reservoirs used for irrigation was low, and severe shortages in surface water used for irrigation occurred. In the Pecos River Basin, streamflow and storage were also below normal and irrigation shortages occurred, however, they were not as severe as in the AWR Basin.

State totals by categories are summarized in tables 1 and 2. In 1975 irrigation accounted for most of the water withdrawn and depleted. About 83 percent of the withdrawals and 77 percent of the depletions were used for this purpose. If evaporation from reservoirs is added to irrigation use the percentages are 87 and 85, respectively. Except for reservoir evaporation, urban and rural uses comprised the second highest withdrawal in 1975; about 5 percent of withdrawals and depletions was used for these purposes.

Most of the surface-water depletion in 1975 was by irrigation; a significant quantity was depleted through reservoir evaporation. Of the 1,072,900 acre-feet of surface-water depletions, about 67 percent was by irrigation, 22 percent by evaporation from stock ponds, reservoirs, and playa lakes, and 11 percent by all other uses.

Ground-water depletion in 1975 was 1,216,200 acre-feet. About 86 percent was depleted by irrigation, 8 percent by urban-rural, and 6 percent by all other uses.

Total depletions in 1975 were 2,286,900 acre-feet of which about 47 percent (1,070,700 acre-feet) was surface water and 53 percent (1,216,200 acre-feet) was ground water.

Table 5 summarizes 1970 and 1975 depletions in river basins and for the State; it shows amounts depleted from surface-water sources, ground-water sources, and the total depletions. The most significant changes in use between 1970 and 1975 occurred in urban-rural and irrigation uses. For comparative purposes, the 1970 and 1975 depletions for these uses are shown in table 5.

As noted, surface-water supplies in 1975 in the Rio Grande and Upper and Lower Colorado River Basins were about normal. The depletion for irrigation and other purposes in these basins in 1975 were approximately the same as in 1970. In the Arkansas-White-Red River Basin surface-water supplies were short and irrigation depletions in 1975 were about two-thirds of the 1970 depletions. Surface-water supplies were also short in the Pecos River Basin. Irrigation depletion in 1975 was about 108,700 acre-feet compared to 127,600 acre-feet in 1970, or about 85 percent of the amount depleted in 1970.

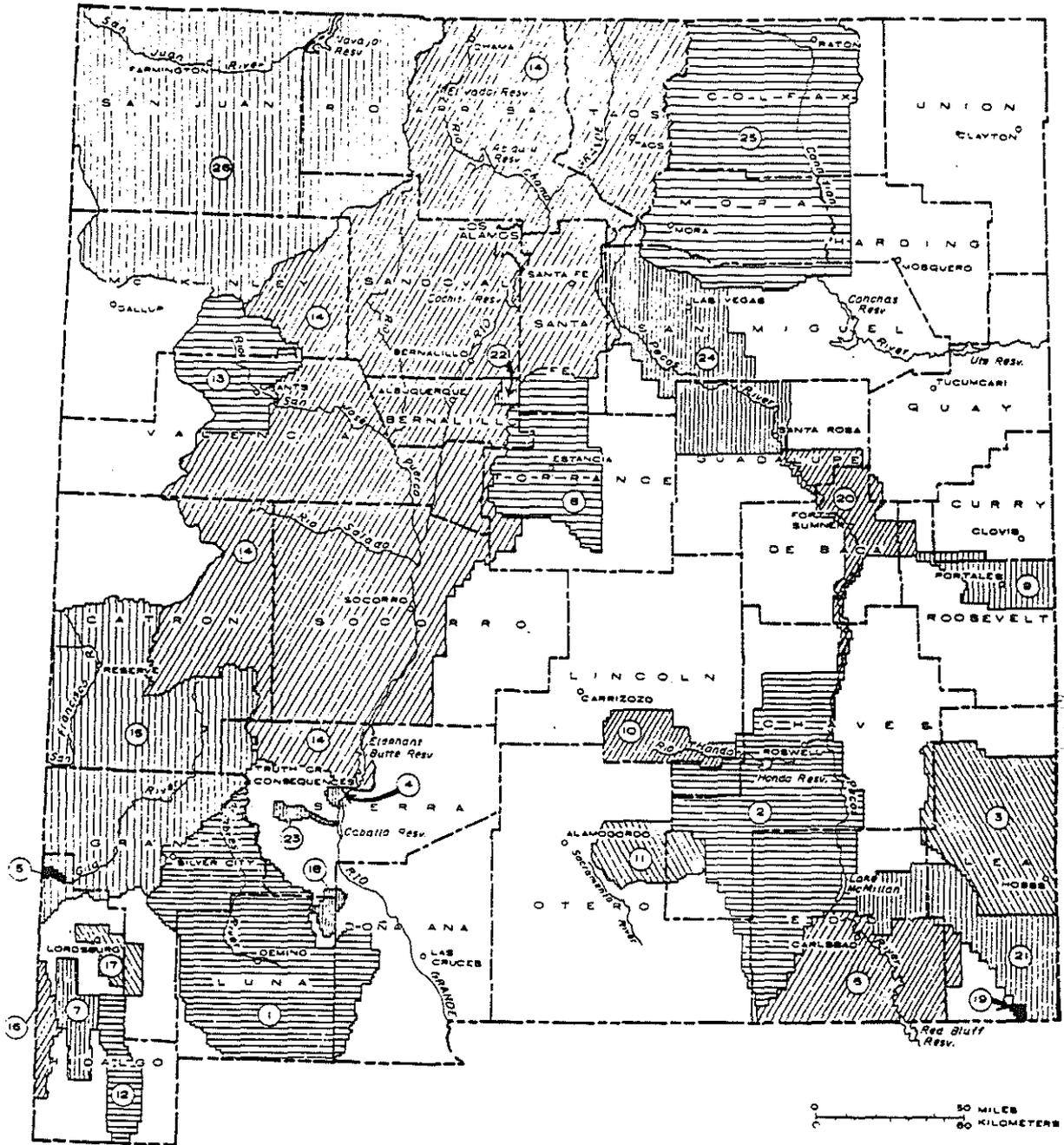
Table 5 shows that since 1970 statewide depletions of ground-water supplies increased. With the exception of the Lower Colorado River Basin, ground-water depletion increased in every river basin. Most of the increase occurred in the urban-rural and irrigation categories. The situation in 1975 in the Lower Colorado River Basin was unusual; land formerly planted to cotton was not planted in 1975 because of depressed prices for that crop and spring weather conditions delayed planting of other crops. These factors resulted in less acreage being planted as compared to 1970 and does not indicate a trend of less use of ground water in this basin.

Most of the increased acreage irrigated with ground water took place in the eastern part of New Mexico in Union, Quay, Curry, and Roosevelt Counties. There was some expansion in the Tularosa basin in Lincoln and Otero Counties; and in the Estancia basin in Santa Fe and Torrance Counties.

The U.S. Bureau of Census (1976) estimated that the population in New Mexico increased from 1,017,055 in 1970 to about 1,147,000 in 1975, an increase of about 13 percent. Most of the increase took place in the State's larger cities, especially those in the Rio Grande, Pecos River, and Upper Colorado River Basins. Historically, and in 1975, about 88 percent of the urban-rural use was furnished from ground water. The increased use of ground water between 1970 and 1975 was about 26 percent. In 1970, urban-rural use was about 4 percent of the total depletion in New Mexico. In 1975, these uses increased to about 5 percent of the total depletion.

As of July 29, 1976, there were 26 declared underground water basins in New Mexico that included a total area of 70,131 square miles (see figure 4). In all of these basins a permit from the State Engineer is necessary prior to drilling a well and the drilling must be done by a driller licensed by the State Engineer. New appropriations of ground water generally are not permitted within these basins unless the State Engineer determines after consideration of the information available to him, and additional evidence submitted in support of an application, that the new appropriation will not impair existing rights. Exceptions are applications for domestic and stock-water purposes which are permitted in all basins except the Gila-San Francisco and Virden Valley Underground Water Basins; all existing water rights in these basins have been adjudicated by the Court and there is presently no additional water available for appropriation for any purpose. Existing rights may be acquired and transferred to another use in all of the declared basins provided impairment to existing rights does not occur.

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BASIN	AREA IN SQUARE MI.	BASIN	AREA IN SQUARE MI.
1. MIMBRES VALLEY	4,279	14. RIO GRANDE	24,144
2. ROSWELL	4,281	15. GILA - SAN FRANCISCO	5,669
3. LEA COUNTY	2,180	16. SAN SIMON	263
4. HOT SPRINGS	38	17. LORDSBURG VALLEY	329
5. VIRDEN VALLEY	19	18. NUTT - HOCKETT	133
6. CARLSBAD	1,965	19. JAL	16
7. ANIMAS	426	20. FORT SUMNER	1,069
8. ESTANCIA	1,724	21. CAPITAN	1,650
9. PORTALES	628	22. SANDIA	73
10. MONDC	611	23. LAS ANIMAS CREEK	75
11. PEÑASCO	723	24. UPPER Pecos	2,709
12. PLAYAS VALLEY	615	25. CANACIAN RIVER	5,826
13. BLUEWATER	1,318	26. SAN JUAN	9,591
		TOTAL	70,131

FIGURE 4 - DECLARED UNDERGROUND WATER BASINS IN NEW MEXICO.

JULY 29, 1976

IRRIGATION IN NEW MEXICO

Because of the importance of irrigation in New Mexico and the fact that most of the water appropriated in the State is used to satisfy irrigation demands, tables 6 through 10 were prepared to show irrigated acreage, sources of irrigation water, and the depletions of these sources. Figure 4 shows the location of irrigated lands in 1975 in New Mexico and identifies which lands used surface water, ground water, or surface and ground water (combined) for irrigation. Table 6 shows historical development of irrigated cropland acreage in New Mexico counties and in the State from 1940 to 1975. Tables 7 and 8 shows sources of water available in 1975 for this acreage in New Mexico counties and river basins.

Table 9 shows total irrigated cropland, acreage irrigated, and irrigation depletions by source of water in 1975 in the surface-water drainage basins outlined on figure 2 except for four small irrigated areas located in the easternmost portion of the Pecos River Basin. This acreage, in Curry, Lea, Quay, and Roosevelt Counties, is irrigated with ground water from the Ogallala Formation and is included with acreage irrigated in the Southern High Plains.

NEW MEXICO CROPLAND

Table 11 shows irrigated, dry, and total cropland acreages in 1975 by county and for the State. These acreages include planted crops and idle and fallow lands in crop rotation. About 86 percent of the dry cropland acreage and 41 percent of the irrigated cropland acreage is located in Union, Harding, Quay, Curry, Roosevelt, and Lea Counties of eastern New Mexico. Curry County ranks first in total cropland with 583,800 acres; Roosevelt County is second with 461,700 acres; and Quay County is third with 348,200 acres. Total cropland in the remaining counties ranges from 3,180 acres in Catron County to 124,500 acres in Union County.

- Lansford, R. R., Sorensen, E. F., Creel, B. J., Latham, R. D., and Wile, W. W., 1976, Sources of irrigation water and irrigated and dry cropland acreages, by county: N. Mex. State Univ. Agr. Exp. Sta. Research Rept. 324, 39 p.
- New Mexico State Engineer Office, 1967, Water resources of New Mexico-- Occurrence, development and use: (N. Mex.) State Plann. Off., 231 p.
- Reynolds, S. E., 1959, New Mexico statement to United States Senate Select Committee on Natural Water Resources: N. Mex. State Engineer, 46 p.
- U.S. Bureau of the Census, 1976, Estimates of the population of New Mexico counties and metropolitan areas, July 1, 1974 and 1975: U.S. Dept. Commerce Series P-26, No. 75-31, 5 p.
- U.S. Bureau of Reclamation, 1950, A basis for formulating a water-resources program for New Mexico: U.S. Bur. Reclamation open-file rept., 178 p.
- U.S. Bureau of Reclamation and New Mexico Interstate Stream Commission, 1976, New Mexico water resources assessment for planning purposes: U.S. Bur. Reclamation, Amarillo, 218 p.

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TABLES

TABLE 1.--SUMMARY OF WATER WITHDRAWALS IN RIVER BASINS IN NEW MEXICO, 1975
(Thousands of Acre-Feet)

Use	Arkansas-White-Red			Texas Gulf			Pecos			Rio Grande		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	1.6	2.3	3.9	0	17.9	17.9	3.0	25.1	28.1	9.6	127.9	137.5
Rural	0.8	1.2	2.0	0	1.3	1.3	0.1	3.6	3.7	0.2	16.6	16.8
Irrigated Agriculture	176.1	149.9	326.0	0	689.2	689.2	220.9	467.1	688.0	1,244.9	414.2	1,659.1
Manufacturing	0	0.1	0.1	0	0.7	0.7	0	0.6	0.6	0	3.4	3.4
Minerals	0.3	0.1	0.4	0	14.4	14.4	0	33.7	33.7	3.4	23.5	26.9
Military	0	0	0	0	1.8	1.8	0	0	0	0.6	13.0	13.6
Livestock	2.7	2.7	5.4	1.2	1.3	2.5	2.7	2.8	5.5	2.8	2.8	5.6
Stockpond Evaporation	10.3	0	10.3	1.2	0	1.2	7.3	0	7.3	8.3	0	8.3
Power	0	0.2	0.2	0	13.9	13.9	13.6	0.5	14.1	0	9.4	9.4
Fish and Wildlife	18.5	0	18.5	0.1	0	0.1	5.6	0.6	6.2	7.9	6.8	14.7
Recreation 1/	0	0.1	0.1	0	0	0	0	0	0	0	0.3	0.3
Reservoir Evaporation	32.7	0	32.7	0	0	0	42.6	0	42.6	32.6	0	82.6
Playa Lake Evaporation	0	0	0	12.0	0	12.0	7.4	0	7.4	18.6	0	18.6
Total Ground-Water Withdrawals		156.6			740.5			534.0			617.9	
Total Surface-Water Withdrawals	243.0			14.5			303.2			1,378.9		
TOTAL WITHDRAWALS			399.6			755.0			837.2			1,996.8

Use	Upper Colorado			Lower Colorado			State Totals		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	12.8	0	12.8	0	4.2	4.2	27.0	177.4	204.4
Rural	0.6	1.6	2.2	0	1.4	1.4	1.7	25.7	27.4
Irrigated Agriculture	222.3	0	222.3	20.9	57.4	78.3	1,885.1	1,777.8	3,662.9
Manufacturing	0	0.2	0.2	0	0.3	0.3	0	5.3	5.3
Minerals	4.0	2.6	6.6	9.0	4.0	13.0	16.7	78.3	95.0
Military	0	0	0	0	0.1	0.1	0.6	14.9	15.5
Livestock	0.4	0.5	0.9	0.9	0.9	1.8	10.7	11.0	21.7
Stockpond Evaporation	3.3	0	3.3	2.3	0	2.3	32.7	0	32.7
Power	56.8	0	56.8	0	0.3	0.3	70.4	24.3	94.7
Fish and Wildlife	2.0	0	2.0	1.3	0	1.3	35.4	7.4	42.8
Recreation 1/	0	0	0	0	0	0	0	0.4	0.4
Reservoir Evaporation	24.2	0	24.2	4.6	0	4.6	186.7	0	186.7
Playa Lake Evaporation	0	0	0	9.4	0	9.4	47.4	0	47.4
Total Ground-Water Withdrawals		4.9			68.6			2,122.5	
Total Surface-Water Withdrawals	326.4			48.4			2,314.4		
TOTAL WITHDRAWALS			331.3			117.0			4,436.9

1/ Land based only

TABLE 2.--SUMMARY OF WATER DEPLETIONS IN RIVER BASINS IN NEW MEXICO, 1975
(Thousands of Acre-Feet)

Use	Arkansas-White-Red			Texas Gulf			Pecos			Rio Grande		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0.7	1.0	1.7	0	8.1	8.1	1.3	12.5	13.8	4.6	58.5	63.1
Rural	0.3	0.6	0.9	0	0.7	0.7	0.1	1.8	1.9	0.1	7.9	8.0
Irrigated Agriculture	78.0	81.9	159.9	0	388.7	388.7	108.7	299.4	408.1	423.0	244.9	667.9
Manufacturing	0	0.1	0.1	0	0.4	0.4	0	0.4	0.4	0	2.0	2.0
Minerals	0.2	0	0.2	0	1.2	1.2	0	12.2	12.2	0.8	14.0	14.8
Military	0	0	0	0	1.0	1.0	0	0	0	0.5	7.3	7.8
Livestock	2.7	2.7	5.4	1.2	1.3	2.5	2.7	2.8	5.5	2.8	2.8	5.6
Stockpond Evaporation	10.3	0	10.3	1.2	0	1.2	7.3	0	7.3	8.3	0	8.3
Power	0	0.2	0.2	0	6.6	6.6	0.3	0.3	0.6	0	7.0	7.0
Fish and Wildlife	18.5	0	18.5	0.1	0	0.1	5.6	0.3	5.9	5.7	3.4	9.1
Recreation 1/	0	0.1	0.1	0	0	0	0	0	0	0	0.3	0.3
Reservoir Evaporation	32.7	0	32.7	0	0	0	42.6	0	42.6	82.6	0	82.6
Playa Lake Evaporation	0	0	0	12.0	0	12.0	7.4	0	7.4	18.6	0	18.6
Total Ground-Water Depletions		86.6			408.0			329.7			348.1	
Total Surface-Water Depletions	143.4			14.5			176.0			547.0		
TOTAL DEPLETIONS			230.0			422.5			505.7			895.1

Use	Upper Colorado			Lower Colorado			State Totals		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	5.8	0	5.8	0	1.9	1.9	12.4	82.0	94.4
Rural	0.3	0.7	1.0	0	0.6	0.6	0.8	12.3	13.1
Irrigated Agriculture	97.6	0	97.6	9.8	33.7	43.5	717.1	1,048.6	1,765.7
Manufacturing	0	0.1	0.1	0	0.2	0.2	0	3.2	3.2
Minerals	1.7	1.1	2.8	4.7	3.7	8.4	7.4	32.2	39.6
Military	0	0	0	0	0.1	0.1	0.5	8.4	8.9
Livestock	0.4	0.5	0.9	0.9	0.9	1.8	10.7	11.0	21.7
Stockpond Evaporation	3.3	0	3.3	2.3	0	2.3	32.7	0	32.7
Power	22.7	0	22.7	0	0.3	0.3	23.0	14.4	37.4
Fish and Wildlife	0.8	0	0.8	1.3	0	1.3	32.0	3.7	35.7
Recreation 1/	0	0	0	0	0	0	0	0.4	0.4
Reservoir Evaporation	24.2	0	24.2	4.6	0	4.6	186.7	0	186.7
Playa Lake Evaporation	0	0	0	9.4	0	9.4	47.4	0	47.4
Total Ground-Water Depletions		2.4			41.4			1,216.2	
Total Surface-Water Depletions	156.8			33.0			1,070.7		
TOTAL DEPLETIONS			159.2			74.4			2,286.9

1/ Land based only

TABLE 3.--WATER WITHDRAWALS IN NEW MEXICO COUNTIES, 1975
(Acre-Feet)

Use	Bernalillo			Catron			Chaves			Colfax		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	94,899	94,899	0	0	0	0	10,750	10,750	1,604	0	1,604
Rural	0	2,464	2,464	0	122	122	0	1,206	1,206	763	265	1,028
Irrigated Agriculture	92,220	1,780	94,000	4,170	700	4,870	37,420	273,210	310,630	54,700	0	54,700
Manufacturing	0	2,068	2,068	0	18	18	0	376	376	0	92	92
Minerals	0	547	547	0	0	0	0	893	893	337	15	352
Military	0	7,770	7,770	0	0	0	0	0	0	0	0	0
Livestock	218	217	435	311	310	621	953	953	1,906	362	363	725
Stockpond Evaporation	252	0	252	815	0	815	2,404	0	2,404	2,119	0	2,119
Power	0	5,141	5,141	0	0	0	0	491	491	0	74	74
Fish and Wildlife	375	0	375	590	0	590	4,606	172	4,778	626	0	626
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	1,200	0	1,200	10,200	0	10,200
Playa Lake Evaporation	0	0	0	200	0	200	0	0	0	0	0	0
Total Ground-Water Withdrawals		114,886			1,150			288,051			809	
Total Surface-Water Withdrawals	93,065			6,086			46,583			70,711		
TOTAL WITHDRAWALS			207,951			7,236			334,634			71,520

Use	Curry			De Baca			Dona Ana			Eddy		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	6,157	6,157	0	0	0	0	9,705	9,705	0	12,255	12,255
Rural	0	541	541	0	320	320	0	3,508	3,508	0	954	954
Irrigated Agriculture	0	305,240	305,240	38,460	22,800	61,260	412,270	72,930	485,200	98,610	134,510	233,120
Manufacturing	0	166	166	0	3	3	0	365	365	0	145	145
Minerals	0	10	10	0	10	10	0	181	181	0	24,904	24,904
Military	0	1,765	1,765	0	0	0	0	2,000	2,000	0	0	0
Livestock	630	629	1,259	238	238	476	268	269	537	428	427	855
Stockpond Evaporation	648	0	648	508	0	508	180	0	180	357	0	357
Power	0	0	0	0	0	0	0	3,503	3,503	13,616	0	13,616
Fish and Wildlife	5	0	5	121	0	121	250	0	250	245	460	705
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	9,900	0	9,900	0	0	0	31,000	0	31,000
Playa Lake Evaporation	300	0	300	500	0	500	3,200	0	3,200	0	0	0
Total Ground-Water Withdrawals		314,508			23,371			92,461			173,655	
Total Surface-Water Withdrawals	1,583			49,727			416,168			144,256		
TOTAL WITHDRAWALS			316,091			73,098			508,629			317,911

1/ Land based only

TABLE 3.--WATER WITHDRAWALS IN NEW MEXICO COUNTIES, 1975 (CONTINUED)
(Acre-Feet)

Use	Grant			Guadalupe			Harding			Hidalgo		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	2,112	2,112	0	362	362	0	0	0	0	987	987
Rural	0	1,254	1,254	0	218	218	0	63	63	0	114	114
Irrigated Agriculture	6,860	10,680	17,540	14,290	1,320	15,610	0	9,330	9,330	7,680	67,710	75,390
Manufacturing	0	78	78	0	3	3	0	8	8	0	4	4
Minerals	9,393	11,305	20,698	0	0	0	0	0	0	0	2,488	2,488
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	344	344	688	335	335	670	259	260	519	295	295	590
Stockpond Evaporation	862	0	862	706	0	706	1,670	0	1,670	655	0	655
Power	0	0	0	0	0	0	0	0	0	0	336	336
Fish and Wildlife	202	0	202	238	0	238	100	0	100	10	0	10
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	1,400	0	1,400	200	0	200	600	0	600	0	0	0
Playa Lake Evaporation	0	0	0	0	0	0	0	0	0	11,900	0	11,900
Total Ground-Water Withdrawals		25,773			2,238			9,661			71,934	
Total Surface-Water Withdrawals	19,061			15,769			2,629			20,540		
TOTAL WITHDRAWALS			44,834			18,007			12,290			92,474

Use	Lea			Lincoln			Los Alamos			Luna		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	9,966	9,966	823	42	865	0	4,837	4,837	0	2,954	2,954
Rural	0	714	714	230	299	529	0	2	2	0	435	435
Irrigated Agriculture	0	191,290	191,290	13,520	7,380	20,900	0	0	0	12,020	150,180	162,200
Manufacturing	0	555	555	0	11	11	0	0	0	0	62	62
Minerals	0	21,612	21,612	0	100	100	0	0	0	0	1,760	1,760
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	512	513	1,025	339	340	679	0	0	0	226	225	451
Stockpond Evaporation	137	0	137	1,372	0	1,372	5	0	5	20	0	20
Power	0	13,876	13,876	0	0	0	0	0	0	0	0	0
Fish and Wildlife	81	0	81	200	0	200	2	0	2	0	0	0
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	100	0	100	100	0	100	0	0	0	0	0	0
Playa Lake Evaporation	8,900	0	8,900	0	0	0	0	0	0	0	0	0
Total Ground-Water Withdrawals		238,526			8,172			4,839			155,616	
Total Surface-Water Withdrawals	9,730			16,584			7			12,266		
TOTAL WITHDRAWALS			248,256			24,756		4,846				167,882

1/ Land based only

TABLE 3.--WATER WITHDRAWALS IN NEW MEXICO COUNTIES, 1975 (CONTINUED)
(Acre-Feet)

Use	McKinley			Mora			Otero			Quay		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	3,186	3,186	0	0	0	4,789	1,546	6,335	0	1,706	1,706
Rural	0	1,456	1,456	0	447	447	13	615	628	0	230	230
Irrigated Agriculture	11,340	0	11,340	44,700	0	44,700	13,220	37,620	50,840	60,740	34,860	95,600
Manufacturing	0	242	242	0	4	4	0	201	201	0	43	43
Minerals	0	4,286	4,286	0	0	0	0	115	115	0	0	0
Military	0	110	110	0	0	0	550	3,314	3,864	0	0	0
Livestock	203	203	406	168	168	336	245	245	490	634	634	1,268
Stockpond Evaporation	1,726	0	1,726	497	0	497	571	0	571	4,246	0	4,246
Power	0	0	0	0	0	0	0	0	0	0	17	17
Fish and Wildlife	507	0	507	1,959	0	1,959	73	0	73	15,300	0	15,300
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	4,900	0	4,900	1,600	0	1,600	0	0	0	500	0	500
Playa Lake Evaporation	0	0	0	0	0	0	0	0	0	0	0	0
Total Ground-Water Withdrawals		9,483			619			43,656			37,490	
Total Surface-Water Withdrawals	18,676			48,924			19,461			81,420		
TOTAL WITHDRAWALS			28,159			49,543			63,117			118,910

Use	Rio Arriba			Roosevelt			Sandoval			San Juan		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	700	700	0	3,483	3,483	0	2,975	2,975	12,856	0	12,856
Rural	103	1,059	1,162	0	377	377	0	853	853	528	1,030	1,558
Irrigated Agriculture	117,400	700	118,100	0	238,860	238,860	74,060	310	74,370	216,870	0	216,870
Manufacturing	0	71	71	0	40	40	0	95	95	0	185	185
Minerals	0	254	254	0	676	676	0	100	100	3,971	1,354	5,325
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	279	280	559	557	556	1,113	109	109	218	276	277	553
Stockpond Evaporation	1,768	0	1,768	797	0	797	770	0	770	2,132	0	2,132
Power	0	0	0	0	0	0	0	700	700	56,756	0	56,756
Fish and Wildlife	663	0	663	23	0	23	270	0	270	1,946	0	1,946
Recreation 1/	0	100	100	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	2,700	0	2,700	0	0	0	100	0	100	23,500	0	23,500
Playa Lake Evaporation	0	0	0	9,700	0	9,700	0	0	0	0	0	0
Total Ground-Water Withdrawals		3,164			243,992			5,142			2,846	
Total Surface-Water Withdrawals	122,913			11,077			75,309			318,835		
TOTAL WITHDRAWALS			126,077			255,069			80,451			321,681

1/ Land based only

TABLE 3.--WATER WITHDRAWALS IN NEW MEXICO COUNTIES, 1975 (CONCLUDED)
(Acre-Feet)

Use	San Miguel			Santa Fe			Sierra			Socorro		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	2,137	0	2,137	4,772	2,824	7,596	0	1,275	1,275	0	1,523	1,523
Rural	0	362	362	0	921	921	0	336	336	0	197	197
Irrigated Agriculture	23,280	450	23,730	16,560	21,050	37,610	19,720	15,780	35,500	92,170	31,250	123,420
Manufacturing	0	29	29	0	177	177	0	10	10	0	98	98
Minerals	0	20	20	0	200	200	70	20	90	0	40	40
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	320	320	640	172	172	344	222	223	445	294	293	587
Stockpond Evaporation	747	0	747	482	0	482	556	0	556	698	0	698
Power	0	0	0	0	8	8	0	0	0	0	0	0
Fish and Wildlife	404	0	404	30	0	30	0	0	0	5,124	6,622	11,746
Recreation 1/	0	100	100	0	0	0	0	100	100	0	0	0
Reservoir Evaporation	19,100	0	19,100	400	0	400	76,500	0	76,500	0	0	0
Playa Lake Evaporation	0	0	0	0	0	0	0	0	0	0	0	0
Total Ground-Water Withdrawals		1,281			25,352			17,744			40,023	
Total Surface-Water Withdrawals	45,988			22,416			97,068			98,286		
TOTAL WITHDRAWALS			47,269			47,768			114,812			138,309

Use	Taos			Torrance			Union			Valencia		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	659	659	0	0	0	0	610	610	0	1,883	1,883
Rural	35	827	862	0	633	633	0	106	106	0	3,781	3,781
Irrigated Agriculture	102,310	7,760	110,070	0	45,990	45,990	6,320	88,680	95,000	294,220	5,450	299,670
Manufacturing	0	72	72	0	5	5	0	3	3	0	100	100
Minerals	2,955	4,432	7,387	0	0	0	0	20	20	0	2,941	2,941
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	120	120	240	233	232	465	949	949	1,898	327	327	654
Stockpond Evaporation	162	0	162	1,284	0	1,284	2,240	0	2,240	1,312	0	1,312
Power	0	0	0	0	0	0	0	129	129	0	0	0
Fish and Wildlife	64	0	64	13	0	13	500	0	500	843	198	1,041
Recreation 1/	0	100	100	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	400	0	400	0	0	0	800	0	800	1,500	0	1,500
Playa Lake Evaporation	0	0	0	12,700	0	12,700	0	0	0	0	0	0
Total Ground-Water Withdrawals		13,970			46,860			90,497			14,680	
Total Surface-Water Withdrawals	106,046			14,230			10,809			298,202		
TOTAL WITHDRAWALS			120,016			61,090			101,306			312,882

1/ Land based only

TABLE 4.--WATER DEPLETIONS IN NEW MEXICO COUNTIES, 1975
(Acre-Feet)

Use	Bernalillo			Catron			Chaves			Colfax		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	42,705	42,705	0	0	0	0	5,375	5,375	722	0	722
Rural	0	1,232	1,232	0	55	55	0	603	603	344	119	463
Irrigated Agriculture	23,130	1,010	24,140	1,740	320	2,060	23,350	179,540	202,890	28,710	0	28,710
Manufacturing	0	1,241	1,241	0	11	11	0	226	226	0	55	55
Minerals	0	196	196	0	0	0	0	128	128	169	2	171
Military	0	4,270	4,270	0	0	0	0	0	0	0	0	0
Livestock	218	217	435	311	310	621	953	953	1,906	362	363	725
Stockpond Evaporation	252	0	252	815	0	815	2,404	0	2,404	2,119	0	2,119
Power	0	3,654	3,654	0	0	0	0	349	349	0	74	74
Fish and Wildlife	375	0	375	590	0	590	4,606	86	4,692	626	0	626
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	1,200	0	1,200	10,200	0	10,200
Playa Lake Evaporation	0	0	0	200	0	200	0	0	0	0	0	0
Total Ground-Water Depletions		54,525			696			187,260			613	
Total Surface-Water Depletions	23,975			3,656			32,513			43,252		
TOTAL DEPLETIONS			78,500			4,352			219,773			43,865

Use	Curry			De Baca			Dona Ana			Eddy		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	2,771	2,771	0	0	0	0	4,852	4,852	0	6,136	6,136
Rural	0	270	270	0	160	160	0	1,754	1,754	0	477	477
Irrigatea Agriculture	0	168,150	168,150	12,800	12,490	25,290	153,600	49,760	203,360	51,290	86,900	138,190
Manufacturing	0	100	100	0	2	2	0	219	219	0	87	87
Minerals	0	2	2	0	2	2	0	59	59	0	8,705	8,705
Military	0	1,059	1,059	0	0	0	0	1,200	1,200	0	0	0
Livestock	630	629	1,259	238	238	476	268	269	537	428	427	855
Stockpond Evaporation	648	0	648	508	0	508	180	0	180	357	0	357
Power	0	0	0	0	0	0	0	2,627	2,627	290	0	290
Fish and Wildlife	5	0	5	121	0	121	250	0	250	245	230	475
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	9,900	0	9,900	0	0	0	31,000	0	31,000
Playa Lake Evaporation	300	0	300	500	0	500	3,200	0	3,200	0	0	0
Total Ground-Water Depletions		172,981			12,892			60,740			102,962	
Total Surface-Water Depletions	1,583			24,067			157,498			83,610		
TOTAL DEPLETIONS			174,564			36,959			218,238			186,572

1/ Land based only

TABLE 4.--WATER DEPLETIONS IN NEW MEXICO COUNTIES, 1975 (CONTINUED)
(Acre-Feet)

Use	Grant			Guadalupe			Harding			Hidalgo		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	1,056	1,056	0	181	181	0	0	0	0	494	494
Rural	0	627	627	0	109	109	0	28	28	0	57	57
Irrigated Agriculture	3,390	5,880	9,270	7,140	760	7,900	0	5,120	5,120	3,780	40,390	44,170
Manufacturing	0	47	47	0	2	2	0	5	5	0	2	2
Minerals	4,978	7,903	12,881	0	0	0	0	0	0	0	2,348	2,348
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	344	344	688	335	335	670	259	260	519	295	295	590
Stockpond Evaporation	862	0	862	706	0	706	1,670	0	1,670	655	0	655
Power	0	0	0	0	0	0	0	0	0	0	336	336
Fish and Wildlife	202	0	202	238	0	238	100	0	100	10	0	10
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	1,400	0	1,400	200	0	200	600	0	600	0	0	0
Playa Lake Evaporation	0	0	0	0	0	0	0	0	0	11,900	0	11,900
Total Ground-Water Depletions		15,857			1,387			5,413			43,922	
Total Surface-Water Depletions	11,176			8,619			2,629			16,640		
TOTAL DEPLETIONS			27,033			10,006			8,042			60,562

Use	Lea			Lincoln			Los Alamos			Luna		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	4,485	4,485	370	19	389	0	2,177	2,177	0	1,477	1,477
Rural	0	357	357	104	134	238	0	1	1	0	218	218
Irrigated Agriculture	0	114,850	114,850	5,660	3,960	9,620	0	0	0	4,580	86,840	91,420
Manufacturing	0	333	333	0	7	7	0	0	0	0	37	37
Minerals	0	4,510	4,510	0	60	60	0	0	0	0	670	670
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	512	513	1,025	339	340	679	0	0	0	226	225	451
Stockpond Evaporation	137	0	137	1,372	0	1,372	5	0	5	20	0	20
Power	0	6,548	6,548	0	0	0	0	0	0	0	0	0
Fish and Wildlife	81	0	81	200	0	200	2	0	2	0	0	0
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	100	0	100	100	0	100	0	0	0	0	0	0
Playa Lake Evaporation	8,900	0	8,900	0	0	0	0	0	0	0	0	0
Total Ground-Water Depletions		131,596			4,520			2,178			89,467	
Total Surface-Water Depletions	9,730			8,145			7			4,826		
TOTAL DEPLETIONS			141,326			12,665			2,185			94,293

1/ Land based only

TABLE 4.--WATER DEPLETIONS IN NEW MEXICO COUNTIES, 1975 (CONTINUED)
(Acre-Feet)

Use	McKinley			Mora			Otero			Quay		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	1,434	1,434	0	0	0	2,395	773	3,168	0	768	768
Rural	0	655	655	0	201	201	6	308	314	0	115	115
Irrigated Agriculture	4,530	0	4,530	20,140	0	20,140	6,370	20,720	27,090	21,570	18,450	40,020
Manufacturing	0	145	145	0	2	2	0	121	121	0	26	26
Minerals	0	2,968	2,968	0	0	0	0	23	23	0	0	0
Military	0	60	60	0	0	0	500	1,819	2,319	0	0	0
Livestock	203	203	406	168	168	336	245	245	490	634	634	1,268
Stockpond Evaporation	1,726	0	1,726	497	0	497	571	0	571	4,246	0	4,246
Power	0	0	0	0	0	0	0	0	0	0	17	17
Fish and Wildlife	507	0	507	1,959	0	1,959	73	0	73	15,300	0	15,300
Recreation 1/	0	0	0	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	4,900	0	4,900	1,600	0	1,600	0	0	0	500	0	500
Playa Lake Evaporation	0	0	0	0	0	0	0	0	0	0	0	0
Total Ground-Water Depletions		5,465			371			24,009			20,010	
Total Surface-Water Depletions	11,866			24,364			10,160			42,250		
TOTAL DEPLETIONS			17,331			24,735			34,169			62,260

Use	Rio Arriba			Roosevelt			Sandoval			San Juan		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	315	315	0	1,567	1,567	0	1,339	1,339	5,785	0	5,785
Rural	46	477	523	0	189	189	0	426	426	237	464	701
Irrigated Agriculture	48,490	390	48,880	0	131,670	131,670	19,480	170	19,650	95,920	0	95,920
Manufacturing	0	43	43	0	24	24	0	57	57	0	111	111
Minerals	0	42	42	0	85	85	0	15	15	1,750	1,063	2,813
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	279	280	559	557	556	1,113	109	109	218	276	277	553
Stockpond Evaporation	1,768	0	1,768	797	0	797	770	0	770	2,132	0	2,132
Power	0	0	0	0	0	0	0	700	700	22,673	0	22,673
Fish and Wildlife	663	0	663	23	0	23	270	0	270	792	0	792
Recreation 1/	0	100	100	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	2,700	0	2,700	0	0	0	100	0	100	23,500	0	23,500
Playa Lake Evaporation	0	0	0	9,700	0	9,700	0	0	0	0	0	0
Total Ground-Water Depletions		1,647		11,077	134,091			2,816			1,915	
Total Surface-Water Depletions	53,946						20,729			153,065		
TOTAL DEPLETIONS			55,593			145,168			23,545			154,980

1/ Land based only

TABLE 4.--WATER DEPLETIONS IN NEW MEXICO COUNTIES, 1975 (CONCLUDED)
(Acre-Feet)

Use	San Miguel			Santa Fe			Sierra			Socorro		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	962	0	962	2,147	1,271	3,418	0	638	638	0	762	762
Rural	0	163	163	0	414	414	0	168	168	0	98	98
Irrigated Agriculture	10,850	250	11,100	8,360	11,590	19,950	7,720	9,340	17,060	26,900	18,730	45,630
Manufacturing	0	17	17	0	106	106	0	6	6	0	59	59
Minerals	0	4	4	0	40	40	7	4	11	0	8	8
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	320	320	640	172	172	344	222	223	445	294	293	587
Stockpond Evaporation	747	0	747	482	0	482	556	0	556	698	0	698
Power	0	0	0	0	8	8	0	0	0	0	0	0
Fish and Wildlife	373	0	373	30	0	30	0	0	0	3,250	3,311	6,561
Recreation 1/	0	100	100	0	0	0	0	100	100	0	0	0
Reservoir Evaporation	19,100	0	19,100	400	0	400	76,500	0	76,500	0	0	0
Playa Lake Evaporation	0	0	0	0	0	0	0	0	0	0	0	0
Total Ground-Water Depletions		854			13,601			10,479			23,261	
Total Surface-Water Depletions	32,352			11,591			85,005			31,142		
TOTAL DEPLETIONS			33,206			25,192			95,484			54,403

Use	Taos			Torrance			Union			Valencia		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
Urban	0	297	297	0	0	0	0	274	274	0	847	847
Rural	16	372	388	0	285	285	0	48	48	0	1,701	1,701
Irrigated Agriculture	44,760	4,400	49,160	0	25,110	25,110	3,110	48,890	52,000	79,740	2,930	82,670
Manufacturing	0	43	43	0	3	3	0	2	2	0	60	60
Minerals	502	754	1,256	0	0	0	0	4	4	0	2,602	2,602
Military	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	120	120	240	233	232	465	949	949	1,898	327	327	654
Stockpond Evaporation	162	0	162	1,284	0	1,284	2,240	0	2,240	1,312	0	1,312
Power	0	0	0	0	0	0	0	129	129	0	0	0
Fish and Wildlife	64	0	64	13	0	13	500	0	500	480	99	579
Recreation 1/	0	100	100	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	400	0	400	0	0	0	800	0	800	1,500	0	1,500
Playa Lake Evaporation	0	0	0	12,700	0	12,700	0	0	0	0	0	0
Total Ground-Water Depletions		6,086			25,630			50,296			8,566	
Total Surface-Water Depletions	46,024			14,230			7,599			83,359		
TOTAL DEPLETIONS			52,110			39,860			57,895			91,925

1/ Land based only

TABLE 5.--WATER DEPLETIONS IN RIVER BASINS IN NEW MEXICO, 1970 AND 1975
(Thousands of Acre-Feet)

Basin & Use	1970			1975			Increase or Decrease, 1970-1975 2/				
	Surface	Ground	Total	Surface	Ground	Total	Surface & Ground (Total)		Ground Only		
Arkansas-White-Red											
Urban-Rural	0.9	1.4	2.3	1.0	1.6	2.6	+ 0.3	(13.0)	+ 0.2	(14.3)	
Irrigated Agriculture	117.3	59.6	176.9	78.0 1/	81.9	159.9	- 17.0	(9.6)	+ 22.3	(37.4)	
Other Uses	83.8	2.3	86.1	64.4	3.1	67.5	- 18.6	(21.6)	+ 0.8	(34.8)	
Total Uses	202.0	63.3	265.3	143.4 1/	86.6	230.0	- 35.3	(13.3)	+ 23.3	(36.8)	
Texas Gulf											
Urban-Rural	--	7.7	7.7	--	8.8	8.8	+ 1.1	(14.3)	+ 1.1	(14.3)	
Irrigated Agriculture	--	341.6	341.6	--	388.7	388.7	+ 47.1	(13.8)	+ 47.1	(13.8)	
Other Uses	13.8	10.5	24.3	14.5	10.5	25.0	+ 0.7	(2.9)	--	--	
Total Uses	13.8	359.8	373.6	14.5	408.0	422.5	+ 48.9	(13.1)	+ 48.2	(13.4)	
Pecos											
Urban-Rural	1.2	13.2	14.4	1.4	14.3	15.7	+ 1.3	(9.0)	+ 1.1	(8.3)	
Irrigated Agriculture	127.6	274.9	402.5	108.7 1/	299.4	408.1	+ 5.6	(1.4)	+ 24.5	(8.9)	
Other Uses	76.2	7.6	83.8	65.9	16.0	81.9	- 1.9	(2.3)	+ 8.4	(110.5)	
Total Uses	205.0	295.7	500.7	176.0 1/	329.7	505.7	+ 5.0	(1.0)	+ 34.0	(11.5)	
Rio Grande											
Urban-Rural	3.3	49.9	53.2	4.7	66.4	71.1	+ 17.9	(33.6)	+ 16.5	(33.1)	
Irrigated Agriculture	417.3	234.6	651.9	423.0	244.9	667.9	+ 16.0	(2.4)	+ 10.3	(4.4)	
Other Uses	119.8	34.2	154.0	119.3	36.8	156.1	+ 2.1	(1.4)	+ 2.6	(7.6)	
Total Uses	540.4	318.7	859.1	547.0	348.1	895.1	+ 36.0	(4.2)	+ 29.4	(9.2)	
Upper Colorado											
Urban-Rural	4.6	0.7	5.3	6.1	0.7	6.8	+ 1.5	(28.3)	--	--	
Irrigated Agriculture	80.4	--	80.4	97.6	--	97.6	+ 17.2	(21.4)	--	--	
Other Uses	47.0	1.4	48.4	53.1	1.7	54.8	+ 6.4	(13.2)	+ 0.3	(21.4)	
Total Uses	132.0	2.1	134.1	156.8	2.4	159.2	+ 25.1	(18.7)	+ 0.3	(14.3)	
Lower Colorado											
Urban-Rural	--	2.0	2.0	--	2.5	2.5	+ 0.5	(25.0)	+ 0.5	(25.0)	
Irrigated Agriculture	14.1	41.2	55.3	9.8	33.7	43.5	- 11.8	(21.3)	- 7.5	(18.2)	
Other Uses	21.8	3.2	25.0	23.2	5.2	28.4	+ 3.4	(13.6)	+ 2.0	(62.5)	
Total Uses	35.9	46.4	82.3	33.0	41.4	74.4	- 7.9	(9.6)	- 5.0	(10.8)	
State Totals											
Urban-Rural	10.0	74.9	84.9	13.2	94.3	107.5	+ 22.6	(26.6)	+ 19.4	(25.9)	
Irrigated Agriculture	756.7	951.9	1,708.6	717.1	1,048.6	1,765.7	+ 57.1	(3.3)	+ 96.7	(10.2)	
Other Uses	362.4	59.2	421.6	340.4	73.3	413.7	- 7.9	(1.9)	+ 14.1	(23.8)	
Total Uses	1,129.1	1,086.0	2,215.1	1,070.7	1,216.2	2,286.9	+ 71.8	(3.2)	+ 130.2	(12.0)	

1/ Below normal surface-water supplies which resulted in shortages for irrigation use. 2/ Figures in () are percent change with respect to 1970 uses.

TABLE 6.--ACRES OF IRRIGATED CROPLAND, INCLUDING IDLE, FALLOW, AND DIVERTED ACREAGE IN NEW MEXICO, BY COUNTY, 1940-75

County	1940	1945	1950	1955	1960	1965	1970	1975
Bernalillo	20,600	20,600	20,000	18,000	15,000	13,300	13,240	11,290
Catron	2,600	2,400	2,400	2,400	2,400	2,400	2,400	2,380
Chaves	72,600	83,300	89,200	94,100	97,600	100,400	100,100	98,720
Colfax	31,300	31,300	32,500	32,500	32,500	33,200	33,200	33,200
Curry	--	--	3,000	74,000	87,000	145,000	192,000	198,630
De Baca	3,300	3,900	4,300	4,300	5,600	7,600	9,790	13,020
Dona Ana	76,500	76,500	86,000	90,400	90,800	91,700	94,120	94,110
Eddy	57,700	67,800	70,100	70,100	73,800	73,800	74,610	75,010
Grant	7,500	7,500	7,500	7,500	7,500	8,000	7,760	7,260
Guadalupe	3,200	3,200	3,200	3,400	3,400	3,400	4,100	4,180
Harding	--	--	100	100	2,100	2,100	6,270	6,550
Hidalgo	3,000	3,000	12,000	17,200	21,200	28,600	35,230	36,480
Lea	3,200	3,900	73,000	77,000	100,000	100,000	100,000	100,000
Lincoln	4,800	4,800	5,000	5,600	5,600	5,600	5,800	6,360
Luna	11,700	16,000	25,800	33,500	37,000	40,600	68,660	69,440
McKinley	6,300	6,300	6,300	6,300	6,520	6,520	6,520	6,520
Mora	21,300	20,000	19,900	15,500	15,460	15,460	15,460	15,460
Otero	4,600	8,800	11,700	12,000	14,300	15,000	15,120	17,960
Quay	200	700	32,600	38,000	42,000	46,000	50,190	53,600
Rio Arriba	35,600	35,600	36,800	37,000	38,900	39,000	39,220	39,980
Roosevelt	11,300	14,500	30,000	50,000	62,000	76,000	103,700	135,000
Sandoval	18,600	18,000	18,000	16,000	15,500	15,500	15,200	14,650
San Juan	50,200	50,200	50,390	52,460	55,250	57,700	59,700	59,730
San Miguel	15,000	15,000	15,000	15,000	13,700	13,700	13,700	13,680
Santa Fe	10,400	10,400	10,400	11,000	11,000	13,000	15,400	15,650
Sierra	4,800	5,100	5,200	5,200	7,000	7,400	8,610	8,760
Socorro	13,300	13,300	15,000	15,200	15,200	15,200	16,500	19,330
Taos	38,000	38,000	39,000	40,200	43,000	44,000	44,000	44,190
Torrance	1,400	1,500	7,100	17,000	20,000	30,000	33,330	35,000
Union	5,800	5,800	5,800	5,800	9,200	15,700	33,900	45,040
Valencia	37,000	38,000	40,000	40,000	42,000	42,000	42,000	41,480
State Total	571,800	605,400	777,290	906,760	992,530	1,107,880	1,259,830	1,322,660

Source: 1940-65 acreage compiled by U.S. Soil Conservation Service, Agricultural Economics Department, New Mexico State University, and the New Mexico State Engineer Office. 1970-75 acreage compiled by the New Mexico State Engineer Office.

TABLE 7 - IRRIGATED CROPLAND ACREAGE AND SOURCE OF WATER USED
FOR IRRIGATION IN NEW MEXICO COUNTIES, 1975

County	Source of Water			Total*
	Surface only	Ground only	Surface and Ground Water	
Bernalillo	8,190	300	2,800	11,290
Catron	1,820	180	380	2,380
Chaves	3,190	80,170	15,360	98,720
Colfax	33,200	--	--	33,200
Curry	--	198,630	--	198,630
De Baca	5,940	7,080	--	13,020
Dona Ana	--	7,790	86,320	94,110
Eddy	13,750	36,240	25,020	75,010
Grant	1,470	3,630	2,160	7,260
Guadalupe	3,730	450	--	4,180
Harding	--	6,550	--	6,550
Hidalgo	--	33,620	2,860	36,480
Lea	--	100,000	--	100,000
Lincoln	2,240	1,940	2,180	6,360
Luna	6,480	61,660	1,300	69,440
McKinley	6,320	200	--	6,520
Mora	15,460	--	--	15,460
Otero	2,890	12,470	2,600	17,960
Quay	38,920	14,680	--	53,600
Rio Arriba	39,570	140	270	39,980
Roosevelt	--	135,000	--	135,000
Sandoval	13,950	20	680	14,650
San Juan	59,730	--	--	59,730
San Miguel	13,530	150	--	13,680
Santa Fe	6,210	8,640	800	15,650
Sierra	870	3,720	4,170	8,760
Socorro	3,660	1,020	14,650	19,330
Taos	38,770	5,420	--	44,190
Torrance	--	35,000	--	35,000
Union	2,990	41,050	1,000	45,040
Valencia	27,760	610	13,110	41,480
State Total	350,640	796,360	175,660	1,322,660

* Includes crops irrigated in 1975 and the idle and fallow lands in crop rotation.

TABLE 8 - ESTIMATED CROPLAND ACREAGE OF IRRIGATED AREAS
IN RIVER BASINS IN NEW MEXICO, 1975

Basin	Source of Water			Total
	Surface water only	Ground water only	Surface and Ground water	
Arkansas-White-Red River	93,850	77,250	1,000	172,100
Texas Gulf	0	404,670	0	404,670
Pecos River	40,730	139,610	42,520	222,860
Rio Grande	147,020	145,300	127,580	419,900
Upper Colorado River	62,180	0	0	62,180
Lower Colorado River	6,860	29,530	4,560	40,950
State Total	350,640	796,360	175,660	1,322,660

TABLE 9.--TOTAL IRRIGATED CROPLAND, ACREAGE IRRIGATED, AND IRRIGATION DEPLETIONS BY SOURCE OF WATER IN SURFACE-WATER DRAINAGE AREAS IN NEW MEXICO, 1975

(Units; Acreage in Acres; Depletions in Acre-Feet)

Drainage Area	Surface Water			Ground Water			Surface & Ground Water			Totals		
	Total 1/	Irrigated	Depletion	Total 1/	Irrigated	Depletion	Total 1/	Irrigated	Depletion	Total 1/	Irrigated	Depletion
Arkansas River												
Colfax County	33,200	23,070	28,710							33,200	23,070	28,710
Vermejo Conservancy Dist.	(6,670)	(4,740)	(620)							(6,670)	(4,740)	(620)
Scattered	(26,530)	(18,330)	(28,090)	--	--	--				(26,530)	(18,330)	(28,090)
Harding County												
Scattered	--	--	--	6,550	4,400	5,120				6,550	4,400	5,120
Mora County												
Scattered	15,460	14,420	20,140	--	--	--				15,460	14,420	20,140
Union County	2,990	2,040	2,430	41,050	36,500	48,290	1,000	900	1,280	45,040	39,440	52,000
Dry Cimarron & Tramperos Cr.	(2,490)	(1,900)	(2,260)	(550)	(500)	(660)	(1,000)	(900)	(1,280)	(4,040)	(3,300)	(4,200)
Clayton & Vic. & Scattered	(500)	(140)	(170)	(40,500)	(36,000)	(47,630)	--	--	--	(41,000)	(36,140)	(47,800)
Quay County (Part)	38,920	33,750	21,570	5,850	5,110	7,730	--	--	--	44,770	38,860	29,300
Arch Hurley Conservancy Dist.	(38,760)	(33,750)	(21,570)	--	--	--	--	--	--	(38,760)	(33,750)	(21,570)
Scattered	(160)	--	--	(5,850)	(5,110)	(7,730)	--	--	--	(6,010)	(5,110)	(7,730)
San Miguel County (Part)	3,280	2,940	4,430	--	--	--	--	--	--	3,280	2,940	4,430
Sapello Creek	(1,960)	(1,780)	(2,380)	--	--	--	--	--	--	(1,960)	(1,780)	(2,380)
Near Conchas	(1,320)	(1,160)	(2,050)	--	--	--	--	--	--	(1,320)	(1,160)	(2,050)
TOTALS	93,850	76,220	77,280	53,450	46,010	61,140	1,000	900	1,280	148,300	123,130	139,700
Southern High Plains												
Curry County												
Scattered	--	--	--	198,630	146,750	168,150	--	--	--	198,630	146,750	168,150
Lea County												
Scattered	--	--	--	100,000	74,430	114,850	--	--	--	100,000	74,430	114,850
Roosevelt County												
Scattered	--	--	--	135,000	118,250	131,670	--	--	--	135,000	118,250	131,670
Quay County (Part)												
House-McAlister Area	--	--	--	8,820	7,510	10,720	--	--	--	8,820	7,510	10,720
TOTALS	--	--	--	442,450	346,940	425,390	--	--	--	442,450	346,940	425,390

1/ Includes crops irrigated in 1975 and the idle and fallow lands in crop rotation

TABLE 9.--TOTAL IRRIGATED CROPLAND, ACREAGE IRRIGATED, AND IRRIGATION DEPLETIONS BY SOURCE OF WATER IN SURFACE-WATER DRAINAGE AREAS IN NEW MEXICO, 1975 (CONTINUED)

(Units: Acreage in Acres; Depletions in Acre-Feet)

Drainage Area	Surface Water			Ground Water			Surface & Ground Water			Totals		
	Total 1/	Irrigated	Depletion	Total 1/	Irrigated	Depletion	Total 1/	Irrigated	Depletion	Total 1/	Irrigated	Depletion
<u>Pecos River</u>												
<u>Chaves & Eddy Counties</u>												
Roswell-Artesia area	2,080	1,980	4,630	113,830	107,790	233,590	14,790	14,050	31,680	130,700	123,820	269,900
<u>Chaves & Lincoln Counties</u>												
Rio Hondo Valley	3,000	2,830	4,530	820	750	1,210	2,140	1,950	3,140	5,960	5,530	8,880
<u>Chaves & Otero Counties</u>												
Rio Penasco Valley	1,780	1,410	2,340	540	450	660	1,320	1,040	1,680	3,640	2,900	4,680
<u>De Baca County</u>												
Fort Sumner Project	5,940	5,590	12,800	7,080	6,610	12,490	--	--	--	13,020	12,200	25,290
Scattered	--	--	--	(7,080)	(6,610)	(12,490)	--	--	--	(5,940)	(5,590)	(12,800)
<u>Eddy County (Part)</u>												
Carlsbad Irrigation Dist.	13,750	9,790	20,710	2,520	1,960	4,470	24,270	21,800	42,590	40,540	33,550	67,770
Carlsbad Basin	(5,660)	(5,360)	(9,760)	--	--	--	(17,000)	(16,090)	(28,460)	(22,660)	(21,450)	(38,220)
Hope area	(4,270)	(3,330)	(8,360)	(2,520)	(1,960)	(4,470)	(7,270)	(5,710)	(14,130)	(14,060)	(11,000)	(26,960)
Scattered	(3,820)	(1,100)	(2,590)	--	--	--	--	--	--	(3,820)	(1,100)	(2,590)
<u>Guadalupe County</u>												
Scattered	3,730	3,140	7,140	450	330	760	--	--	--	4,180	3,520	7,900
<u>Lincoln County</u>												
Scattered	200	150	210	240	200	300	--	--	--	440	350	510
<u>San Miguel County (Part)</u>												
Storrie Project	10,250	8,180	6,420	150	150	250	--	--	--	10,400	8,330	6,670
Pecos River Mainstem	(6,520)	(5,130)	(1,400)	--	--	--	--	--	--	(6,520)	(5,130)	(1,400)
Gallinas River & Other Tribs.	(2,380)	(1,940)	(3,520)	(150)	(150)	(250)	--	--	--	(2,530)	(2,090)	(3,770)
Scattered	(1,350)	(1,110)	(1,500)	--	--	--	--	--	--	(1,350)	(1,110)	(1,500)
TOTALS	40,730	33,070	58,780	125,630	118,290	253,730	42,520	38,840	79,090	208,880	190,200	391,600
<u>Central Closed Basins</u>												
<u>Dona Ana & Lincoln & Otero Cos.</u>												
Tularosa Basin	1,260	780	2,050	7,800	4,370	9,610	2,640	1,760	4,290	11,700	6,910	15,950
Near Carrizozo	(90)	(80)	(170)	(880)	(790)	(1,550)	(40)	(40)	(90)	(1,010)	(910)	(1,810)
Tularosa Comm. Ditch System	(500)	(300)	(800)	--	--	--	(2,000)	(1,300)	(3,260)	(2,500)	(1,600)	(4,060)
Tularosa-Alamogordo area	(670)	(400)	(1,080)	(6,920)	(3,580)	(8,060)	(600)	(420)	(940)	(8,190)	(4,400)	(10,080)
<u>Otero County (Part)</u>												
Salt Basin	--	--	--	5,310	4,300	10,100	--	--	--	5,310	4,300	10,100
<u>Santa Fe & Torrance Counties</u>												
Estancia Basin	--	--	--	43,500	28,440	35,860	--	--	--	43,500	28,440	35,860
TOTALS	1,260	780	2,050	56,610	37,110	55,570	2,640	1,760	4,290	60,510	39,650	61,910

1/ Includes crops irrigated in 1975 and idle and fallow lands in crop rotation

TABLE 9.--TOTAL IRRIGATED CROPLAND, ACREAGE IRRIGATED, AND IRRIGATION DEPLETIONS BY SOURCE
OF WATER IN SURFACE-WATER DRAINAGE AREAS IN NEW MEXICO, 1975 (CONTINUED)

(Units: Acreage in Acres; Depletions in Acre-Feet)

Drainage Area	Surface Water			Ground Water			Surface & Ground Water			Totals		
	Total 1/	Irrigated	Depletion	Total 1/	Irrigated	Depletion	Total 1/	Irrigated	Depletion	Total 1/	Irrigated	Depletion
Rio Grande												
Bernalillo-Sandoval-Socorro- Valencia Counties												
Middle Rio Grande Conserv. Dist.	42,640	36,150	89,330	--	--	--	24,740	22,150	56,080	67,380	58,300	145,410
Bernalillo County (Part)												
Scattered	100	100	110	300	200	460	--	--	--	400	300	570
Dona Ana & Sierra Counties												
Rincon & Mesilla Valleys	--	--	--	8,740	8,020	17,560	89,820	84,860	194,950	98,560	92,880	212,510
Elephant Butte Irrig. Dist.	--	--	--	--	--	--	(89,820)	(84,860)	(194,950)	(89,820)	(84,860)	(194,950)
Outside EBID	--	--	--	(8,740)	(8,020)	(17,560)	--	--	--	(8,740)	(8,020)	(17,560)
McKinley County (Part)												
Near Bluewater	260	240	430	--	--	--	--	--	--	260	240	430
Rio Arriba County	39,180	36,940	47,840	140	120	190	270	260	420	39,590	37,320	48,450
Rio Chama & Tributaries	(29,410)	(28,120)	(35,740)	--	--	--	--	--	--	(29,410)	(28,120)	(35,740)
Truchas	(2,160)	(2,090)	(1,700)	--	--	--	--	--	--	(2,160)	(2,090)	(1,700)
Velarde	(2,170)	(1,920)	(3,050)	--	--	--	--	--	--	(2,170)	(1,920)	(3,050)
Española & Vic.-Mainstem	(5,440)	(4,810)	(7,350)	(140)	(120)	(190)	(270)	(260)	(420)	(5,850)	(5,190)	(7,960)
Sandoval County (Part)												
Scattered	4,220	2,440	3,750	20	20	40	--	--	--	4,240	2,460	3,790
Santa Fe County (Part)												
Scattered	6,210	3,890	7,680	140	140	240	800	700	1,280	7,150	4,730	9,200
Sierra County (Part)	870	790	1,650	1,470	1,440	2,830	670	590	1,340	3,010	2,820	5,820
Hot Springs	(150)	(140)	(310)	(480)	(470)	(920)	(50)	(40)	(90)	(680)	(650)	(1,320)
Scattered	(720)	(650)	(1,340)	(990)	(970)	(1,910)	(620)	(550)	(1,250)	(2,330)	(2,170)	(4,500)
Socorro County (Part)												
Scattered	910	780	2,120	330	250	550	1,200	1,200	3,120	2,440	2,230	5,790
Taos County	38,770	33,450	44,760	5,420	3,880	4,400	--	--	--	44,190	37,330	49,160
Sunshine Valley-Cerro	--	--	--	(5,420)	(3,880)	(4,400)	--	--	--	(5,420)	(3,880)	(4,400)
Scattered	(38,770)	(33,450)	(44,760)	--	--	--	--	--	--	(38,770)	(33,450)	(44,760)
Valencia County (Part)	5,290	2,220	4,680	610	350	800	5,300	4,300	9,030	11,200	6,870	14,510
Bluewater-Toltec Irrig. Dist.	(800)	(120)	(250)	--	--	--	(4,690)	(4,200)	(8,820)	(5,490)	(4,320)	(9,070)
San Rafael-Grant area	(440)	(100)	(210)	(70)	--	--	(610)	(100)	(210)	(1,120)	(200)	(420)
Scattered	(4,050)	(2,000)	(4,220)	(540)	(350)	(800)	--	--	--	(4,590)	(2,350)	(5,020)
TOTALS	138,450	117,000	202,350	17,170	14,420	27,070	122,800	114,060	266,220	278,420	245,480	495,640

1/ Includes crops irrigated in 1975 and the idle and fallow lands in crop rotation

TABLE 9.--TOTAL IRRIGATED CROPLAND, ACREAGE IRRIGATED, AND IRRIGATION DEPLETIONS BY SOURCE OF WATER IN SURFACE-WATER DRAINAGE AREAS IN NEW MEXICO, 1975 (CONCLUDED)

(Units: Acreage in Acres; Depletions in Acre-Feet)

Drainage Area	Surface Water			Ground Water			Surface & Ground Water			Totals		
	Total	Irrigated	Depletion	Total	Irrigated	Depletion	Total	Irrigated	Depletion	Total	Irrigated	Depletion
<u>Western Closed Basin</u>												
<u>Catron & Socorro Counties</u>	--	--	--	690	690	1,790	200	110	130	890	800	1,920
TOTALS	--	--	--	690	690	1,790	200	110	130	890	800	1,920
<u>San Juan River</u>												
McKinley County (Part)	2,060	1,630	1,300	--	--	--	--	--	--	2,060	1,630	1,300
Rio Arriba County (Part)	390	350	430	--	--	--	--	--	--	390	350	430
San Juan County	59,730	43,620	95,920	--	--	--	--	--	--	59,730	43,620	95,920
TOTALS	62,180	45,600	97,650	--	--	--	--	--	--	62,180	45,600	97,650
<u>Lower Colorado River</u>												
<u>Catron County (Part)</u>												
San Francisco River Valley	1,820	1,320	1,550	180	140	160	180	180	220	2,180	1,640	1,930
<u>Grant & Hidalgo Counties</u>												
Gila River Valley	640	410	570	1,340	930	1,450	4,380	3,760	6,660	6,360	5,100	8,680
Virgen Valley-Hidalgo Co.	--	--	--	(380)	(280)	(620)	(2,860)	(2,760)	(5,220)	(3,240)	(3,040)	(5,840)
Other-Grant County	(640)	(410)	(570)	(960)	(650)	(830)	(1,520)	(1,000)	(1,440)	(3,120)	(2,060)	(2,840)
<u>Hidalgo County (Part)</u>												
San Simon Valley	--	--	--	2,900	2,280	3,250	--	--	--	2,900	2,280	3,250
<u>McKinley County (Part)</u>												
Scattered	4,000	1,510	2,800	200	--	--	--	--	--	4,200	1,510	2,800
<u>Valencia County (Part)</u>												
Zuni	400	130	230	--	--	--	--	--	--	400	130	230
TOTALS	6,860	3,370	5,150	4,620	3,350	4,860	4,560	3,940	6,880	16,040	10,650	16,890
<u>Southwestern Closed Basins</u>												
<u>Dona Ana & Luna & Sierra Cos.</u>												
Nutt-Hockett area	--	--	--	10,930	10,320	17,930	--	--	--	10,930	10,320	17,930
<u>Grant & Hidalgo Counties</u>												
Lordsburg Valley	--	--	--	10,010	6,320	11,500	--	--	--	10,010	6,320	11,500
<u>Grant & Luna Counties</u>												
Mimbres Basin	7,310	6,800	5,500	52,680	41,340	71,890	1,940	1,000	1,620	61,930	49,140	79,010
<u>Hidalgo County (Part)</u>												
Animas Valley	--	--	--	22,120	14,770	26,580	--	--	--	22,120	14,770	26,580
Playas Valley	--	--	--	(14,900)	(8,250)	(15,080)	--	--	--	(14,900)	(8,250)	(15,080)
TOTALS	--	--	--	(7,220)	(6,520)	(11,500)	--	--	--	(7,220)	(6,520)	(11,500)
TOTALS	7,310	6,800	5,500	95,740	72,750	127,900	1,940	1,000	1,620	104,990	80,550	135,020
STATE TOTALS	350,640	282,840	448,760	796,360	639,560	957,450	175,660	160,610	359,510	1,322,660	1,083,010	1,765,720

1/ Includes crops irrigated in 1975 and the idle and fallow lands in crop rotation

TABLE 10.--ACREAGE IRRIGATED AND ESTIMATED DEPLETIONS OF WATER FROM
GROUND-WATER STORAGE IN NEW MEXICO, 1969 AND 1975

<u>County and Area</u>	<u>1969</u>		<u>1975</u>	
	<u>Acreage</u>	<u>Depletion (Ac.-Ft.)</u>	<u>Acreage</u>	<u>Depletion (Ac.-Ft.)</u>
<u>Curry County</u>				
Total	148,710	160,840	146,750	168,150
<u>Dona Ana, Luna, Sierra Cos.</u>				
Nutt-Hockett	9,630	16,470	10,000	16,920
<u>Grant, Hidalgo Counties</u>				
Lordsburg Valley	8,530	14,420	6,320	11,630
<u>Harding County</u>				
Total	4,210	5,040	4,400	5,120
<u>Hidalgo County</u>				
Rodeo area	1,860	2,980	2,280	3,250
Animas Valley	11,940	20,180	8,250	15,080
Playas Valley	1,200	2,030	6,520	11,500
Subtotal County	<u>15,000</u>	<u>25,190</u>	<u>17,050</u>	<u>29,830</u>
<u>Lea County</u>				
Total	75,750	104,990	74,430	114,850
<u>Lincoln County</u>				
Carrizozo area	0	0	800	1,570
<u>Luna, Grant Counties</u>				
Mimbres Basin 1/	45,580	77,880	40,840	71,350
<u>Otero County</u>				
Salt Basin	4,000	8,870	4,300	9,910
Other areas	<u>5,560</u>	<u>5,010</u>	<u>4,440</u>	<u>10,230</u>
Total	<u>9,560</u>	<u>13,880</u>	<u>8,740</u>	<u>20,140</u>
<u>Quay County</u>				
House area	5,100	7,710	7,510	10,720
Other areas	<u>2,560</u>	<u>3,870</u>	<u>5,110</u>	<u>7,730</u>
Total	<u>7,660</u>	<u>11,580</u>	<u>12,620</u>	<u>18,450</u>

TABLE 10--ACREAGE IRRIGATED AND ESTIMATED DEPLETIONS OF WATER FROM
GROUND-WATER STORAGE IN NEW MEXICO, 1969 AND 1975 (CONCLUDED)

<u>County and Area</u>	<u>1969</u>		<u>1975</u>	
	<u>Acreage</u>	<u>Depletion (Ac.-Ft.)</u>	<u>Acreage</u>	<u>Depletion (Ac.-Ft.)</u>
<u>Roosevelt County</u>				
Total	84,120	99,810	118,250	131,670
<u>Santa Fe, Torrance Cos.</u>				
Estancia Basin	25,930	32,420	28,440	35,860
<u>Socorro County</u>				
San Augustin Plains	0	0	690	1,790
<u>Union County</u>				
Total	25,110	29,970	36,000	47,630
STATE TOTALS	<u>459,790</u>	<u>592,490</u>	<u>505,330</u>	<u>674,960</u>

1/ There were -0- acres in 1969 and 840 acres in 1975 in Grant County.
Remaining acreage is in Luna County.

TABLE 11 - NEW MEXICO CROPLAND, 1975 ^{1/}

County	Acres		
	Total	Irrigated	Dry
Bernalillo	15,090	11,290	3,800
Catron	3,180	2,380	800
Chaves	99,570	98,720	850
Colfax	54,860	33,200	21,660
Curry	583,800	198,630	385,170
De Baca	14,420	13,020	1,400
Dona Ana	94,110	94,110	0
Eddy	75,160	75,010	150
Grant	8,100	7,260	840
Guadalupe	6,890	4,180	2,710
Harding	64,950	6,550	58,400
Hidalgo	36,480	36,480	0
Lea	122,810	100,000	22,810
Lincoln	6,660	6,360	300
Luna	69,440	69,440	0
McKinley	18,720	6,520	12,200
Mora	25,410	15,460	9,950
Otero	19,060	17,960	1,100
Quay	348,200	53,600	294,600
Rio Arriba	52,280	39,980	12,300
Roosevelt	461,700	135,000	326,700
Sandoval	16,450	14,650	1,800
San Juan	60,630	59,730	900
San Miguel	15,780	13,680	2,100
Santa Fe	36,930	15,650	21,280
Sierra	8,760	8,760	0
Socorro	36,800	19,330	17,470
Taos	47,960	44,190	3,770
Torrance	86,000	35,000	51,000
Union	124,500	45,040	79,460
Valencia	64,080	41,480	22,600
State Totals	2,678,780	1,322,660	1,356,120

^{1/} Includes planted irrigated and dry cropland in 1975 and the idle and fallow lands in crop rotation.

M E M O R A N D U M

August 11, 1982

TO: Files

FROM: Brian C. Wilson

New Mexico Water Use Data System

I. Introduction

- A. Inventories of water use in New Mexico have been made since 1950. Since 1965 withdrawals and depletions have been estimated by categories of use every fifth year. The sources of water supply were identified in these inventories and tabulated by category, and summarized by county, river basin, and for the state.
- B. The inventories carried out prior to 1975 are not as detailed as the later inventories. The 1975 inventory was really the first comprehensive inventory, and the results were published in TR 41; published results of the 1980 inventory became available in June 1982 - TR 44.

II. Purpose of Water Use Inventories

- A. The primary objective of water-use inventories is to provide accurate and reliable statistics of water-use data to administrators and planners.
- B. The water-use data is used by: cities, universities, consultants, state agencies, and federal agencies.
- C. The water-use inventory carried out by the State Engineer Office is the only source of data that gives comprehensive estimates of current use by category of use.

III. Categories of Use in New Mexico

- A. Urban is defined as cities and densely settled fringe areas having a population of 2,500 inhabitants or more. Urban withdrawals include

water furnished from public water supply^{1/} systems and self-supplied households within the city limits. Urban water uses do not include water used for Armed Forces Installations. Military uses are tabulated in a separate category.

- B. Rural is defined as towns, villages and settlements of less than 2,500 inhabitants. It includes public water supplies, single homesteads such as farms and ranches; trailer courts and subdivisions.

Source of Data. Data are obtained for all urban places and for several rural communities either by contacting SEO district offices or public water supplies directly by phone. However, part of the rural population must be estimated in a different manner. This method consists of obtaining the Census population by county and subtracting population from this estimate where data are available from other sources. The remaining population, which is almost entirely rural in nature, are multiplied by a weighted gpcd to obtain an estimate of water use for these people.

- C. Irrigated Agriculture includes crop production only—parks, golf courses, etc., are included with Recreation.

Source of Data. Cropping patterns are obtained from annual acreage inventories made cooperatively by this office, the Statistic Reporting Service, and New Mexico State University. Depletions are estimated by using a weighted cropping pattern for selected areas and computing Consumptive Irrigation Requirement (CIR) by the original Blaney-Criddle formula. Total depletions are estimated by adding on farm, off farm, and canal and lateral losses to CIR (as appropriate). Withdrawals are calculated by using the appropriate irrigation efficiencies. If pumping records and reservoir releases are available, these data are used to estimate withdrawals.

^{1/} A Public Water Supply is defined by the EPA as a system which serves at least 15 service connections or at least 25 year-round residents.

- D. Livestock includes dairies, feed-lots, and stock-watering.

Source of Data. Numbers of livestock by county are obtained from the USDA/NMCLRS bulletin entitled "New Mexico Agricultural Statistics."

Withdrawals are estimated using the following gpcd rates: Horses = 10; Beef Cattle = 10; Milk Cows = 50 (includes livestock consumption, cleaning, cooling, and processing water); Sheep = 2; Hogs 2; and Chickens = 0.05.

- E. Stockpond Evaporation

Source of Data. Numbers and size of ponds are obtained from administrative agencies (BIA, BLM, USFS, ASCS records). Evaporation is estimated by calculating net evaporation times average surface area times fullness factor.

- F. Commercial includes self-supplied hotels, motels, restaurants, garages, and office buildings, etc. Water used for road, golf course, and subdivision construction if not obtained from a public water supply system is also tabulated in this category.

Source of Data. Some data for self-supplied commercial uses is obtained from SEO district office meter files. In counties where no commercial water use data is on file in the SEO, known enterprises are contacted directly. The "Community Profiles" published by the New Mexico Commerce and Industry Department are used as a general guide to major employers engaged in commercial activity within a given area; in some cases, the Chamber of Commerce is also contacted to locate self-supplied establishments.

- G. Industrial includes self-supplied manufacturing of electronic components, furniture, wearing apparel, machine parts, sawmill operations, and the processing of food and kindred products (except for dairies). Water used in sand and gravel operations where concrete block or ready mix concrete are also produced is tabulated in the Minerals category.

Source of Data. Data for self-supplied industrial uses is obtained in the same fashion as it is in the Commercial category. Note that in 1975 industrial water use was estimated on the basis of the number of manufacturing employees in a given county and a weighted good. Subsequent research revealed that this method yielded erroneous results and was therefore abandoned.

- H. Minerals includes the extraction and processing of all minerals and fossil fuels.

Source of Data. Where data are available in SEO district offices, these data are used. Other sources are letters to companies that request data for a particular year and from the Oil Conservation and Oil and Gas Accounting Commissions.

- I. Military includes uses at Armed Forces Installations of which there are six in New Mexico--Cannon AFB, Kirtland AFB, NASA, White Sands, Holloman AFB, and Fort Wingate.

Source of Data. Except for Kirtland AFB which reports to our SEO district office in Albuquerque, data is obtained by contacting the military installations directly (a personal visit is usually required).

- J. Power includes water used to generate electric power such as geothermal, hydroelectric, and thermoelectric, etc.

Source of Data. Where data are available in SEO district offices, these data are used. Otherwise, data is obtained by contacting the power companies directly by phone.

- K. Fish and Wildlife includes single-purpose reservoir evaporation^{2/} and irrigated crops grown on wildlife refuges.

Source of Data. Acreage irrigated and cropping pattern are obtained from administrative agencies (New Mexico Game & Fish, U.S. Fish & Wildlife).

^{2/} See May 12, 1981 memo, "Categorizing Reservoirs and Lakes" for further details regarding the criteria for determining what category evaporation from a natural or man-made water body is tabulated in.

Withdrawals and depletions for irrigation are estimated as outlined under Irrigated Agriculture. Evaporation from single purpose (F&WL) reservoirs is calculated by average surface area and net evaporation.

- L. Recreation includes water use for land based recreation for state and federal recreation areas; campgrounds and recreational-vehicle (RV) parks; organizational camps and resorts; and highway rest stops. Water used for the irrigation of self-supplied parks and golf courses is included in this category. Evaporation from single-purpose recreational water bodies is also included in this category^{2/}.

Source of Data. Water use in state and federal recreation areas is estimated on the basis of visitor day counts furnished by the state and national park services and a weighted gpcd. Water use in other parks, campgrounds, and for golf courses is obtained by contacting individual facilities directly by phone or letter.

- M. Reservoir Evaporation

Source of Data. Evaporation is calculated by average surface area times net evaporation. Except for some of the large reservoirs for which measured evap data is available from the USBR or USGS, net evaporation is estimated by subtracting precipitation from the gross amounts shown in Map No. 4-R 33582, published by SCS in April 1972, and entitled "Gross Annual Lake Evaporation in New Mexico."

BCW:er

M E M O R A N D U M

May 12, 1981

TO: Files

FROM: Brian C. Wilson

SUBJECT: Categorizing Reservoirs and Lakes

A study of previous water use inventories in New Mexico (1970 and 1975) has revealed that the criteria used to sort the state's reservoirs and lakes into specific categories based upon the respective use of the water body has not been firmly established. Though criteria have existed, they have been rather loosely defined and thus have been widely misconstrued. This has resulted in a number of striking inconsistencies in previous inventories.

In both the 1970 and 1975 inventories reservoir and lake evaporation was based upon data furnished to the State Engineer Office by the Bureau of Reclamation which is now known as the Water and Power Resources Service (WPRS). In reviewing the 1970 and 1975 data, it became apparent that the WPRS had based water surface evaporation upon the maximum water surface area of a lake or in the case of a reservoir upon the water surface area at spillway elevation. Since annual evaporation losses from an impounding water body should be computed on the basis of average annual water surface area, the WPRS's previous evaporative water loss estimates are too high.

For this reason the evaporative losses for reservoirs and lakes during the calendar year of 1980 have been updated and will reflect evaporation based upon average annual water surface water area.

The following paragraphs set forth criteria for grouping reservoirs and lakes in New Mexico by major uses.

Fish and Wildlife

1. Any reservoir or lake which has been constructed by man for the purpose of providing a habitat for the propagation or sustenance of fish and wildlife will be considered a single purpose water body and will be tabulated in the Fish and Wildlife category.
2. Any natural depression in the earth's crust or any man made depression such as an exhausted quarry to which water is diverted from a ground water or surface water source by a work of man for the purpose of supplementing or creating a habitat for the propagation or sustenance of fish and wildlife will be considered a single purpose water body and will be tabulated in the Fish and Wildlife category.

Recreation

Any reservoir or lake which has been constructed by men and to which water is diverted from a surface or ground water source for the purpose of enhancing the aesthetics of a park area or to provide the opportunity for the public to enjoy leisure activities such as angling and swimming within a park area will be considered a single purpose water body and will be tabulated in the Recreation category.

Reservoirs and Lakes

1. Any man made reservoir which has been constructed to serve many purposes and is fed by a natural spring or surface water runoff will be considered a multipurpose reservoir and will be tabulated in the Reservoir and Lake category.

2. Any body of water which has formed naturally on the earth's crust, i.e. it is not the result of man's work, will be considered a natural lake and tabulated in the Reservoir and Lake category.
3. Any natural, undrained desert-plain basin that intermittently becomes a shallow lake or provides terminal storage for surface runoff and ground water (i.e., at or below ground-water level) will be considered a Playa Lake and will be tabulated as a subcategory adjunct to the Reservoir and Lake category.

Minerals

1. A man made reservoir which has been constructed for the sole purpose of providing a water supply to a mineral extraction and processing operation will be considered a single purpose reservoir and will be tabulated in the Minerals category.
2. A man made reservoir which has been constructed for the purpose of evaporating water from a mine dewatering process or from a tailings pond will be considered a single purpose reservoir and will be tabulated in the Minerals category.

BCW:er